Amendments to the Claims

1. (Currently Amended) A rear projection display device comprising a light source lamp, color splitting means for splitting light emitted from the light source lamp into a plurality of color components, a plurality of liquid crystal panels for optically modulating each color light split by the color splitting means, color synthesizing means for synthesizing each of the color light modulated by the liquid crystal panels, and projection means for projecting image light which is color-synthesized by the color synthesizing means on a screen from slantly above or slantly below,

wherein a polarization direction of at least one color component out of the image light irradiated on the screen is parallel to a vertical cross section of the screen, and the polarization direction of the at least one color component is manipulated to reduce reflection on the screen and to improve brightness ~~, surface shape of the screen and the image light are manipulated to increase image quality~~.

2. (Original) The rear projection display device according to claim 1,

wherein the screen is rectangular, and the vertical cross section of the screen is a y-z plane when the width direction of the screen is taken along an x-axis, the height direction of the screen is taken along a y-axis, and the vertical direction to the screen is taken along a z-axis.

3. (Previously Presented) The rear projection display device according to claim 1, wherein the polarization direction of at least the green component out of the image light irradiated on the screen is parallel to the vertical cross section of the screen.

4. (Original) The rear projection display device according to claim 3,

wherein polarization direction adjusting means is provided for adjusting a polarization direction of at least the green component out of the image light synthesized by the color synthesizing means so that the polarization direction of at least the green component is parallel to the vertical cross section of the screen.

5. (Original) The rear projection display device according to claim 4,

wherein the polarization direction adjusting means comprises a retardation plate.

6. (Original) The rear projection display device according to claim 1,

wherein polarization directions of all the color components of the image light irradiated on the screen are parallel to the vertical cross section of the screen.

7. (Original) The rear projection display device according to claim 6,

wherein polarization direction adjusting means is provided for selectively adjusting a color component, of which a polarization direction is orthogonal with the vertical cross section of the screen, out of the image light synthesized by the color

synthesizing means so that the polarization direction of the color component is parallel to the vertical cross section of the screen.

8. (Currently Amended) The rear projection display device according to claim 7,

wherein the polarization direction adjusting means comprises a narrow band retardation plate.

9. (Original) The rear projection display device according to claim 1,

wherein the projection means includes a plurality of aspherical mirrors functioning as a lens.

10. (Original) The rear projection display device according to claim 1,

wherein the relation $i\text{-min}<\alpha<i\text{-max}$ is satisfied, where an angle of a maximum value i-max and a minimum value i-min is formed by a normal of a back surface of the screen and a principal ray of the image light irradiated on the back surface of the screen, and an angle α is obtained when the reflectivity of light, having a polarization direction parallel to the vertical cross section of the screen, to the back surface of the screen is minimum.

11. (Previously Presented) The rear projection display device according to claim 1,

wherein an angle of a maximum value j-max and a minimum value j-min is formed by a normal of a front surface of the screen and a principal ray of the image light irradiated on the front surface of the screen, and an angle β is obtained when the reflectivity of light, having a polarization direction parallel to the vertical cross section of the screen, to the front surface of the screen is at a minimum.

12. (Original) The rear projection display device according to claim 11,

wherein the screen includes a fresnel lens and the front surface of the screen is an inclined surface with a ring body shaped protrusion of the fresnel lens.

13. (Original) The rear projection display device according to claim 10,

wherein the polarization direction of at least the green component out of the image light irradiated on the screen is parallel to the vertical cross section of the screen.

14. (Currently Amended) A rear projection display device comprising a light source lamp, color splitting means for splitting light emitted from the light source lamp into a plurality of color components, a plurality of liquid crystal panels for optically modulating each color light split by the color splitting means, color synthesizing means for synthesizing each of the color light modulated by the liquid crystal panels, and projection means for projecting image light which is color-synthesized by the color synthesizing means on a screen from a slant side,

wherein a polarization direction of at least one color component out of the image light irradiated on the screen is parallel to a horizontal cross section of the screen, and the polarization direction of the at least one color component is manipulated to reduce reflection on the screen and to improve brightness~~, surface shape of the screen and the image light are manipulated to increase image quality~~.

15. (Original) The rear projection display device according to claim 14, wherein the screen is rectangular, and the horizontal cross section of the screen is an x-z plane when the width direction of the screen is taken along an x-axis, the height direction of the screen is taken along a y-axis, and the vertical direction to the screen is taken along a z-axis.

16. (Original) The rear projection display device according to claim 14, wherein at least one of the color components is green.

17. (Original) The rear projection display device according to claim 16, wherein polarization direction adjusting means is provided for adjusting a polarization direction of at least the green component out of the image light irradiated on the screen so that the polarization direction of at least the green component is parallel to the horizontal cross section of the screen.

18. (Original) The rear projection display device according to claim 17, wherein the polarization direction adjusting means comprises a retardation plate.

19. (Original) The rear projection display device according to claim 14, wherein polarization directions of all the color components of the image light irradiated on the screen are parallel to the horizontal cross section of the screen.

20. (Original) The rear projection display device according to claim 19, wherein polarization direction adjusting means is provided for selectively adjusting a color component, of which polarization direction is orthogonal with the horizontal cross section of the screen, out of the image light synthesized by the color synthesizing means so that the polarization direction of the color component is parallel to the horizontal cross section of the screen.

21. (Currently Amended) The rear projection display device according to claim 20, wherein the polarization direction adjusting means comprises a narrow band retardation plate.

22. (Original) The rear projection display device according to claim 14, wherein the projection means includes a plurality of aspherical mirrors functioning as a lens.

23. (Original) The rear projection display device according to claim 14,

wherein the relation i-min<α<i-max is satisfied, where an angle of a maximum value i-max and a minimum value i-min is formed by a normal of a back surface of the screen and a principal ray of the image light irradiated on the back surface of the screen, and an angle α is obtained when the reflectivity of light, having a polarization direction parallel to the horizontal cross section of the screen, to the back surface of the screen is minimum.

24. (Previously Presented) The rear projection display device according to claim 14,

wherein an angle of a maximum value j-max and a minimum value j-min is formed by a normal of a front surface of the screen and a principal ray of the image light irradiated on the front surface of the screen, and an angle β is obtained when the reflectivity of light, having a polarization direction parallel to the horizontal cross section of the screen, to a front surface of the screen at a minimum.

25. (Original) The rear projection display device according to claim 24,

wherein the screen includes a fresnel lens and the front surface of the screen is an inclined surface with a ring body shaped protrusion of the fresnel lens.

26. (Original) The rear projection display device according to claim 23,

wherein the polarization direction of at least the green component out of the image light irradiated on the screen is parallel to the horizontal cross section of the screen.

27. (Currently Amended) A rear projection display device comprising a light source lamp, color splitting means for splitting light emitted from the light source lamp into a plurality of color components, a plurality of liquid crystal panels for optically modulating each color light split by the color splitting means, color synthesizing means for synthesizing each of the color light modulated by the liquid crystal panels, and projection means for slantly projecting image light which is color-synthesized by the color synthesizing means on a screen,

wherein a polarization direction of at least one color component out of the image light irradiated on the screen is parallel to a plane including the image light irradiated on the screen and a normal of the screen, and the polarization direction of the at least one color component is manipulated to reduce reflection on the screen and to improve brightness~~, surface shape of the screen and the image light are manipulated to increase image quality~~.

28. (Original) The rear projection display device according to claim 27, wherein at least one of the color components is green.

29. (Original) The rear projection display device according to claim 28,

wherein polarization direction adjusting means is provided for adjusting a polarization direction of at least the green component out of the image light irradiated on the screen so that the polarization direction of at least the green component is parallel to the plane including the image light irradiated on the screen and the normal of the screen.

30. (Original) The rear projection display device according to claim 29,

wherein the polarization direction adjusting means comprises a retardation plate.

31. (Original) The rear projection display device according to claim 27,

wherein polarization directions of all the color components of the image light irradiated on the screen are parallel to the plane including the image light irradiated on the screen and the normal of the screen.

32. (Original) The rear projection display device according to claim 31,

wherein polarization direction adjusting means is provided for selectively adjusting a color component, of which a polarization direction is orthogonal with the plane including the image light irradiated on the screen and the normal of the screen, out of the image light synthesized by the color synthesizing means so that the polarization direction of the color component is parallel to the plane.

33. (Currently Amended) The rear projection display device according to claim 32,

wherein the polarization direction adjusting means comprises a narrow band retardation plate.

34. (Original) The rear projection display device according to claim 27,

wherein the projection means includes a plurality of aspherical mirrors functioning as a lens.

35. (Original) The rear projection display device according to claim 27,

wherein the relation i-min<α<i-max is satisfied, where an angle of a maximum value i-max and a minimum value i-min is formed by a normal of a back surface of the screen and a principal ray of the image light irradiated on the back surface of the screen, and an angle α is obtained when the reflectivity of light, having a polarization direction parallel to the plane including the image light irradiated on the back surface of the screen and the normal of the back surface of the screen, to the back surface of the screen is minimum.

36. (Previously Presented) The rear projection display device according to claim 27,

wherein an angle of a maximum value j-max and a minimum value j-min is formed by a normal of a front surface of the screen and a principal ray of the image light

irradiated on the front surface of the screen, and an angle β is obtained when the reflectivity of light, having a polarization direction parallel to the plane including the image light irradiated on the front surface of the screen and the normal of the front surface of the screen, to the front surface of the screen is at a minimum.

37. (Original) The rear projection display device according to claim 36,

wherein the screen includes a fresnel lens and the front surface of the screen is an inclined surface with a ring body shaped protrusion of the fresnel lens.

38. (Original) The rear projection display device according to claim 27,

wherein the polarization direction of at least the green component out of the image light irradiated on the screen is parallel to the plane including the image light irradiated on the back surface of the screen and the normal of the back surface of the screen.

39. (New) A rear projection display device comprising:

a light source lamp,

color splitting means for splitting light emitted from the light source lamp into tree color components of red, green and blue,

a plurality of liquid crystal panels for optically modulating each color light split by the color splitting means,

color synthesizing means for synthesizing each of the color light modulated by the liquid crystal panels,

polarization direction adjusting means for selectively adjusting a color component which is an S-polarized component to a surface of a screen on which image light is irradiated, out of the image light synthesized by the color synthesizing means so that the S-polarized component becomes a P-polarized component to the surface of the screen on which the image light is irradiated, and

projection means for slantly projecting image light which is color-synthesized by the color synthesizing means on a screen,

wherein all color components out of the image light irradiated on the screen are P-polarized to the surface of the screen on which the image light is irradiated.

40. (New) The rear projection display device according to claim 39, wherein the polarization direction adjusting means comprises a narrow band retardation plate.

41. (New) The rear projection display device according to claim 39, wherein the relation i-min<α<i-max is satisfied, where an angle of a maximum value i-max and a minimum value i-min is formed by a normal of a back surface of the screen and a principal ray of the image light irradiated on the back surface of the screen, and an angle α is obtained when the reflectivity of light, which is P-polarized to the surface on which the image light is irradiated, to the back surface of the screen is minimum.

42. (New) The rear projection display device according to claim 1, wherein the relation j-min<β<j-max is satisfied, where an angle of a maximum value j-max and a minimum value j-min is formed by a normal of a front surface of the screen and a principal ray of the image light irradiated on the front surface of the screen, and an angle β is obtained when the reflectivity of light, which is P-polarized to the surface of the screen on which the image light is irradiated, to the front surface of the screen is minimum.